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10/807,664

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EXAMINER

KING, SONIA J

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/807,664

**Applicant(s)**

JARD ET AL.

**Examiner**

Sonia J. King

**Art Unit**

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 1 objected to because of the following informalities:
2. the number 5 should be removed from the phrase "*the 5 following steps*".
3. each of the steps should begin with a verb that shows present tense action such as: "*determining*", "*measuring*", "*estimating*".
4. Appropriate correction is required.

### ***Response to Arguments***

1. Applicant's arguments filed 11/19/2007 have been fully considered but they are not persuasive. The previous rejection is being maintained since the applicant has not amended the claims to reflect the arguments in such a way as to differentiate the claimed invention over the prior art of record.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 11-17, 22-32 rejected under 35 U.S.C. 102(b) as being anticipated by Ottosson et al WO 01/29982 A1.

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3. With respect to claims 1 and 11, Ottosson discloses a method of signal processing for a spread spectrum digital radio communication receiver, comprising the following steps:
4. – determine a propagation profile (correlation metrics) of a propagation channel (multipath components) between sending means and the receiver, including at least one propagation path associated with a reception energy; (Page 4 lines 5-8)
5. –measure data (Page 5 lines 1-10) relating to an energy distribution (signal strength measurements) in the propagation profile (correlation metrics); (Page 4 line 7, 28-33)
6. –estimate information symbols (pilot symbols or recovered data symbols; page 10 lines 25-27) carried by a signal received originating from means of sending over the propagation channel, by applying to said signal a processing taking into account a predetermined maximum number (threshold; Page 26 lines 14-26) of propagation paths, said propagation paths (multipath components) taken into account being chosen according to a criterion (selection strategies; page 14 lines 10-15) selected from several criteria (absolute or relative measures of signal power or signal to noise ratio), (Page 4 lines 10-15;  
in which said criterion is selected as a function of the measured data relating to the energy distribution (signal strength) in the propagation profile. (see also Figures 4 and 5)
7. With respect to claims 2, 12 and 23, Ottosson discloses, method according to Claim 1, in which the step of determining a propagation profile of a propagation channel

between sending means and the receiver comprises, a processing applied to the signal received first signal) identifying, on the basis of an analysis of an impulse response of the propagation channel between the sending means and the receiver, a number of propagation paths (multipath components) detected and respective reception energies (respective signal strengths) for these paths. (Page 4 lines 22-30; see also Figure 4)

8. With respect to claims 3, 13 and 24, Ottosson discloses, method propagation according to Claim 1, in paths taken into account which said are chosen according to a criterion selected from a set comprising a first criterion (desired signal collecting correlation times) according to which the predetermined maximum number of propagation paths (respective first correlation outputs) of greatest energy (respective signal strengths) on average are taken into account, and a second criterion (interference collecting correlation time) according to which the predetermined maximum number of propagation paths of largest instantaneous energy (signal strengths for the first correlation outputs) are taken into account. (Page 5 lines 1-10; see also Figure 5)

9. As to claims 4, 14 and 25, Ottosson discloses a method (signal strength determiner) in which the measured data relating to the energy distribution (signal strength) in the propagation profile comprise a measurement of energy dispersion for the propagation paths detected. (Pg. 6 lines 4-6, Pg. 5 lines 26-32; Figure 5)

10. As to claim 5, 15 and 26, Ottosson discloses a method in which the selection of said criterion as a function of the measured data relating to the energy distribution in the

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propagation profile comprises a comparison of said measurement of energy dispersion for the propagation paths detected with a threshold. (Figs 13a,b; page 19 lines 16-30)

11. As to claims 6, 16 and 27, Ottosson discloses a method in which said threshold is obtained in relation to a prior choice of a gap in performance between two strategies for choosing propagation paths taken into account in said processing according to respective criteria. (Figures 5,6 ; page 12 lines 18-27, page 14 lines 10-16, page 15 lines 1-10)

12. As to claims 7, 17 and 28, Ottosson discloses a method in which the obtaining of the threshold is done on the basis of correspondences between an energy 1-32; Figures 16 a, b)

13. As to claim 18, Ottosson discloses a receiver in which the means for selecting a criterion for choosing from several criteria as a function of the measured data relating to the energy distribution in the propagation profile are designed to obtain the threshold on the basis of the correspondences stored in the means ~ for storing correspondences between an energy dispersion in a propagation profile and a gap in performance between two strategies for choosing the propagation paths according to respective criteria. (Figures 4, 5, 6, 14 a, b, 15a, b; Page 22 lines 19-30, Page 23 lines 1-32, Page 24 lines 1-30)

With respect to claims 22 and 32 Ottosson discloses a computer programme, loadable associated with a processor, into a memory and comprising:  
instructions for the implementation (page 29 lines 7-19) during the execution of said programme by the processor (page 29 lines 19-26, and 3-7) of the followings steps :

- determine a propagation profile (correlation metrics) of a propagation channel (multipath components) between sending means and the receiver, including at least one propagation path associated with a reception energy; (Page 4 lines 5-8)
- measure data (Page 5 lines 1-10) relating to an energy distribution (signal strength measurements) in the propagation profile (correlation metrics); (Page 4 line 7, 28-33)
- estimate information symbols (pilot symbols or recovered data symbols; page 10 lines 25-27) carried by a signal received originating from means of sending over the propagation channel, by applying to the said signal a processing taking into account a predetermined maximum number (threshold; Page 26 lines 14-26) of propagation paths, the said propagation paths taken into account being chosen according to a criterion (selection strategies; page 14 lines 10-15) selected from several criteria (absolute or relative measures of signal power or signal to noise ratio), (Page 4 lines 10-15)

in which said criterion is selected as a function of the measured data relating to the energy distribution (signal strength) in the propagation profile (correlation metrics) (see also Figures 4 and 5)

14. Claims 8-10, 19- 21, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Proakis, Digital Communications Third Edition, Chapter 14.

15. As to claims 8, 19 and 29, Proakis discloses a method, in which the measurement of energy dispersion for the propagation paths detected comprises an

estimation of a mean energy gap between the propagation paths detected (Page 786 paragraphs 2-4, Page 788 paragraph 1, page 789 paragraphs 1-4)

16. As to claims 9, 20 and 30, Proakis discloses a method, in which the mean energy gap between the propagation paths detected is estimated in the least squares sense (page 801 paragraphs 1-2)

17. As to claims 10, 21 and 31, Proakis discloses a method, in which the mean energy gap between the propagation paths detected is estimated according to an arithmetic mean of ratios between the energies of consecutive paths from among the propagation paths detected (Figure 14-5-6, Figure 14-5-7; page 804 paragraph 1-page 806 paragraph 3)

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonia J. King whose telephone number is 571-270-1307. The examiner can normally be reached on Mon-Fri 7:30am-5pm alt Fri's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SJK

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**SUPERVISORY PATENT EXAMINER**